



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/729,993	12/09/2003	Sung-Hyu Han	1293.1954	2787
21171	7590	01/11/2005	EXAMINER	
STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			YOUNG, BRIAN K	
			ART UNIT	PAPER NUMBER
			2819	

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/729,993

**Applicant(s)**

HAN ET AL.

**Examiner**

Brian Young

**Art Unit**

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 16 is/are allowed.
- 6) ☒ Claim(s) 1,6-8,13-15 and 17 is/are rejected.
- 7) ☒ Claim(s) 2-5 and 9-12 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

Art Unit: 2819

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,6,7,8,13,14, 15 and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Chu et al.

Chu et al disclose a method and apparatus for decoding a variable length codeword (VLC) by reading a VLC, the VLC having a maximum length of X bits. The VLC is used as an index into a first table, wherein the first table contains decoded values for all possible VLC'S with Y bits not equal to any value in a first set of values. Y is typically less than X and comprises, in the preferred embodiment, the most significant bits of the VLC. If the first Y bits of the VLC are not equal to any value in a first set of values then a second value is returned from the first table. If the first Y bits of the VLC are equal to any value in a first set of values, then a pointer to a second table is returned from the first table. The multiple tiered lookup table approach is shown in FIG. 1. This scheme divides the very large lookup tables required by the multiplex decoder into several smaller tables. Incoming encoded data is input as a bit stream 1002 shown in FIG. 10. This data is a VLC code word shown in FIG. 8, and may contain VLC'S which may be as long as 14 bits in length. For a VLC, which has a maximum length of 14 bits the bit, stream is broken into two distinct portions, to address two smaller lookup tables. As shown in FIG. 10, 1000 may contain two lookup tables 1003 known as the "frequent" lookup table, and 1004 that is known as the "infrequent" lookup table. Each of these

Art Unit: 2819

tables contain  $2^8$  entries (256) to allow full decoding of the incoming bit stream.

Frequent table 1003, is used for the most frequent occurrences of the first 8 bits in the incoming bit stream 1002. Because a great majority of the VLC'S will be 8 bits in length or less, a quick lookup into frequent table 1003 may obtain the decoded values; hence a soft demodulation is performed. The decoding that cannot be performed by the first table will lead to indirection into the "infrequent" table 1004. Therefore, if the first eight bits are a predetermined value, for example 0000 0000 (for an infrequently occurring VLC), then the frequent table will contain a pointer to infrequent table 1004. 1004 contains entries for VLC'S, which may be seen decoder circuitry less frequently than those given in table 1003. For the vast majority of operations, lookups will be a single cycle operation by addressing an element in the 256 entry frequent table 1003. Tables 1003 and 1004 will return the decoded value as output stream 1005.

3. Applicant's arguments filed 11/1/04 with respect to the above claims have been fully considered but they are not persuasive. As shown in FIG. 10 of Chu et al, 1000 may contain two lookup tables 1003 known as the "frequent" lookup table, and 1004 that is known as the "infrequent" lookup table. Each of these tables contain  $2^8$  entries (256) to allow full decoding of the incoming bit stream. Frequent table 1003, is used for the most frequent occurrences of the first 8 bits in the incoming bit stream 1002. Because a great majority of the VLC'S will be 8 bits in length or less, a quick lookup into frequent table 1003 may obtain the decoded values; hence a soft demodulation is performed. The grouping of the frequent vs. infrequent codewords complies with the requirement that "similar" codewords be grouped together.

Art Unit: 2819

4. Applicant's arguments, filed 11/1/04, with respect to claims 5 and 12 have been fully considered and are persuasive. The rejection of claims 5 and 12 has been withdrawn.

5. Claim 16 is allowed.

6. Claims 2-5 and 9-12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Young whose telephone number is 571-272-1816. The examiner can normally be reached on Mon-Fri 7:30-4:00.

Art Unit: 2819

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Tokar can be reached on 571-272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Brian Young  
Primary Examiner  
Art Unit 2819

\*\*\*